

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-121. (Canceled)

122. (Currently Amended) An array, comprising:

a positionally-addressable ordered array of polynucleotide probes bound to a solid support; and

said polynucleotide probes comprising a plurality of at least 100 polynucleotide probes of different nucleotide sequences, each said different nucleotide sequence comprising a sequence complementary and hybridizable to a different genomic sequence of the same species of organism, said respective genomic sequences complementary and hybridizable to the nucleotide sequences of the probes in said plurality being found at sequential sites in said genome of said species of organism spanning a genomic region of at least 25,000 bp, wherein the distance between 5' ends of said sequential sites is always less than 500 bp, wherein the nucleotide sequences of at least two of the probes in said plurality are complementary and hybridizable to genomic sequences contained entirely within an intron.

123-177. (Canceled)

178. (Withdrawn—Currently Amended) A method for preparing an array comprising synthesizing a plurality of polynucleotide probes on a solid support, wherein:

said polynucleotide probes are ordered on said solid support so as to be positionally-addressable;

said polynucleotide probes comprise a plurality of at least 100 polynucleotide probes of different nucleotide sequences;

each said different nucleotide sequence comprises a sequence complementary and hybridizable to a different genomic sequence of the same species of organism;

said respective genomic sequences complementary and hybridizable to the nucleotide sequences of the polynucleotide probes in said plurality are found at sequential sites in the said genome of said species of organism spanning a genomic region of at least 25,000 bp;

the distance between 5' ends of said sequential sites is always less than 500 bp; and
the nucleotide sequences of at least two of the probes in said plurality are
complementary and hybridizable to genomic sequences contained entirely within an intron.

179-184. (Canceled)

185. (Previously presented) The array of claim 122, wherein regions of low
information content selected from the group consisting of repetitive elements, simple repeats,
and polyX repeats have been excluded from said different nucleotide sequences.

186. (Withdrawn) The array of claim 185, wherein the array has 150 to 1,000
different polynucleotide probes per 1 cm².

187. (Withdrawn) The array of claim 185, wherein the array has 1,000 to 10,000
different polynucleotide probes per 1 cm².

188. (Withdrawn) The array of claim 185, wherein the array has 10,000 to 50,000
different polynucleotide probes per 1 cm².

189. (Previously presented) The array of claim 185, wherein the array has greater
than 50,000 different polynucleotide probes per 1 cm².

190. (Withdrawn—Currently Amended) The array of claim 185, wherein said
genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of
the probes in said plurality are overlapping in said genome.

191. (Withdrawn—Currently Amended) The array of claim 185, wherein said
genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of
the probes in said plurality are adjacent in said genome.

192. (Currently Amended) The array of claim 185, wherein said genomic sequence
complementary and hybridizable to the nucleotide sequence of each probe in said plurality is
spaced apart from that complementary and hybridizable to other probes in said genome by
less than 200 bp.

193. (Withdrawn—Currently Amended) The array of claim 185, wherein the
nucleotide sequences of the probes in said plurality consist of no more than 1,000
nucleotides.

194. (Withdrawn—Currently Amended) The array of claim 193, wherein said genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of the probes in said plurality are overlapping in said genome.

195. (Withdrawn—Currently Amended) The array of claim 193, wherein said genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of the probes in said plurality are adjacent in said genome.

196. (Withdrawn—Currently Amended) The array of claim 193, wherein said genomic sequence complementary and hybridizable to the nucleotide sequence of each probe in said plurality is spaced apart from that complementary and hybridizable to the nucleotide sequences of other probes in said plurality in said genome by less than 200 bp.

197. (Currently Amended) The array of claim 185, wherein the nucleotide sequences of the probes in said plurality consist of 10-200 nucleotides.

198. (Withdrawn—Currently Amended) The array of claim 197, wherein said genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of the probes in said plurality are overlapping in said genome.

199. (Withdrawn—Currently Amended) The array of claim 197, wherein said genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of the probes in said plurality are adjacent in said genome.

200. (Currently Amended) The array of claim 197, wherein said genomic sequence complementary and hybridizable to the nucleotide sequence of each probe in said plurality is spaced apart from that complementary and hybridizable to the nucleotide sequences of other probes in said plurality in said genome by less than 200 bp.

201. (Withdrawn—Currently Amended) The array of claim 185, wherein the nucleotide sequences of the probes in said plurality consist of 10-30 nucleotides.

202. (Withdrawn—Currently Amended) The array of claim 201, wherein said genomic sequences complementary and hybridizable to the ~~different~~ the nucleotide sequences of the probes in said plurality are overlapping in said genome.

203. (Withdrawn—Currently Amended) The array of claim 201, wherein said genomic sequences complementary and hybridizable to the ~~different~~ the nucleotide sequences of the probes in said plurality are adjacent in said genome.

204. (Withdrawn—Currently Amended) The array of claim 201, wherein said genomic sequence complementary and hybridizable to the nucleotide sequence of each probe in said plurality is spaced apart from that complementary and hybridizable to the nucleotide sequences of other probes in said plurality in said genome by less than 200 bp.

205. (Withdrawn—Currently Amended) The array of claim 185, wherein the nucleotide sequences of the probes in said plurality consist of 20-50 nucleotides.

206. (Withdrawn—Currently Amended) The array of claim 205, wherein said genomic sequences complementary and hybridizable to the ~~different~~ the nucleotide sequences of the probes in said plurality are overlapping in said genome.

207. (Withdrawn—Currently Amended) The array of claim 205, wherein said genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of the probes in said plurality are adjacent in said genome.

208. (Withdrawn—Currently Amended) The array of claim 205, wherein said genomic sequence complementary and hybridizable to the nucleotide sequence of each probe in said plurality is spaced apart from that complementary and hybridizable to the nucleotide sequences of other probes in said plurality in said genome by less than 200 bp.

209. (Withdrawn—Currently Amended) The array of claim 185, wherein the nucleotide sequences of the probes in said plurality consist of 40-80 nucleotides.

210. (Withdrawn—Currently Amended) The array of claim 209, wherein said genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of the probes in said plurality are overlapping in said genome.

211. (Withdrawn—Currently Amended) The array of claim 209, wherein said genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of the probes in said plurality are adjacent in said genome.

212. (Withdrawn—Currently Amended) The array of claim 209, wherein said genomic sequence complementary and hybridizable to the nucleotide sequence of each probe in said plurality is spaced apart from that complementary and hybridizable to the nucleotide sequences of other probes in said plurality in said genome by less than 200 bp.

213. (Withdrawn—Currently Amended) The array of claim 185, wherein the nucleotide sequences of the probes in said plurality consist of 50-150 nucleotides.

214. (Withdrawn—Currently Amended) The array of claim 213, wherein said genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of the probes in said plurality are overlapping in said genome.

215. (Withdrawn—Currently Amended) The array of claim 213, wherein said genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of the probes in said plurality are adjacent in said genome.

216. (Withdrawn—Currently Amended) The array of claim 213, wherein said genomic sequence complementary and hybridizable to the nucleotide sequence of each probe in said plurality is spaced apart from that complementary and hybridizable to the nucleotide sequences of other probes in said plurality in said genome by less than 200 bp.

217. (Withdrawn—Currently Amended) The array of claim 185, wherein the nucleotide sequences of the probes in said plurality consist of 60 nucleotides.

218. (Withdrawn—Currently Amended) The array of claim 217, wherein said genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of the probes in said plurality are overlapping in said genome.

219. (Withdrawn—Currently Amended) The array of claim 217, wherein said genomic sequences complementary and hybridizable to the ~~different~~ nucleotide sequences of the probes in said plurality are adjacent in said genome.

220. (Withdrawn—Currently Amended) The array of claim 217, wherein said genomic sequence complementary and hybridizable to the nucleotide sequence of each probe is spaced apart from that complementary and hybridizable to the nucleotide sequences of other probes in said plurality in said genome by less than 200 bp.

221. (Previously presented) The array of claim 185, wherein said organism is a eukaryote.

222. (Previously presented) The array of claim 185, wherein said organism is a human.

223. (Previously presented) The array of claim 185, wherein said organism is a plant.

224. (Previously presented) The array of claim 185, wherein said organism is a mammal.

225. (Withdrawn) The array of claim 185, wherein said plurality of polynucleotide probes is at least 1,000 probes.

226. (Previously presented) The array of claim 185, wherein said plurality of polynucleotide probes is at least 10,000 probes.

227. (Withdrawn) The array of claim 185, wherein said plurality of polynucleotide probes is 1,000 to 50,000 probes.

228. (Previously presented) The array of claim 185, further comprising a sample on the surface of said solid support such that said sample (i) is in contact with said polynucleotide probes, and (ii) comprises a population of cellular RNA or nucleic acid derived therefrom, said contact being under conditions conducive to hybridization between said population and said polynucleotide probes.

229. (Previously presented) The array of claim 228 wherein said population is labeled.

230. (Previously presented) The array of claim 228 wherein said population comprises total cellular mRNA or nucleic acid derived therefrom.

231. (Previously presented) The array of claim 228 wherein said population comprises nucleic acids of at least 10,000 different sequences.

232. (Previously presented) The array of claim 185, wherein the distance between said 5' ends of said sequential sites is determined after excluding consideration of said regions of low information content.